SABE

(Society for Automation in Business Education)

DATA PROCESSOR

FOR BETTER BUSINESS EDUCATION

Volume 1, Number 2, February 1961

SABE Is YOUR Business

Comments and congratulations on the first issue of the SABE DATA PROCESSOR have been pouring in. In addition, we have received many fine press notices. If we had the space we would like to reproduce this material so that you could see for yourselves how successful you have made your new organization. You have done a fine job, but we need more support. Don't forget, SABE Is YOUR Business! What can you do to help? Here is a suggested list of topics to be forwarded to the Editor:

1. Notice of meetings having some regional or national appeal that discuss an area of data processing:

   a. Common-language media and devices--punched cards, punched-paper tape, magnetic ink, punched tags or tickets, photographic readers, optical readers or scanners, perforators, etc.

   b. Electronic data processing media and equipment--computer systems, magnetic tapes, punched cards, punched paper tapes, etc.

   c. Operations research.

   d. Programming.

   e. The effect of automation on: personnel, systems, equipment, etc.

   f. Automated systems.

2. Concept or word lists (with definitions) that most persons should know.

3. New equipment coming on the market.

4. Methods of using this equipment, including case studies of actual use.

a. How information about automation equipment, media, and methods can be taught, or is taught, in the classroom.

5. Good articles or books that should be mentioned on automation, particularly those that tell how Business Education is being affected by it and what people are doing in teaching to meet the challenge of automation.

6. Excellent speakers that might well be worth putting on a speaker list for others to make use of.

7. Research that is being carried on in this field that others ought to know about. A complete listing of all research papers relating to Business Education and Automation being written for Masters and Doctors degrees would be of inestimable value to educators and others.

8. Educational installations of IDP-EDP or other automated equipment, including a discussion of the problems involved and how they were solved.

9. Meetings at which SABE has been mentioned or discussed and/or at which SABE members have arranged for the discussion of automation topics. Any of the procedures used to obtain the discussion of SABE and the problems overcome should be reported so others can benefit from the work done elsewhere.

10. Names and addresses of prospective members.

11. What other organizations are doing to promote a knowledge of automation.

12. What kind of knowledge should be taught to students at various grade levels, through graduate collegiate programs.

NOMINATION OF OFFICERS AND SABE-CALIFORNIA BUSINESS EDUCATION ASSOCIATION MEETING

According to the SABE Constitution, the officers of the organization are elected for a one year term in May and take office on September 1. The offices to be filled are listed below together with nominations received to date. At present, Dr. E. Dana Gibson is acting as President and Enoch J. Haga is acting as Editor. Nominations for all offices should be mailed at once to Dr. Gibson at the address given below. Unless there is objection by a member, a <u>tentative</u> election of officers will take place at the SABE-California Business Education Association meeting. After the meeting, in the next issue of the SABE DATA PROCESSOR, will appear a slate of nominees (all names sent in plus nominations accepted from the floor at the meeting). Voting members will then have at least thirty days to return their marked ballots, (which will be provided), but members who voted at the meeting will not be allowed to vote again by mail. The following persons have been nominated (but nominations are still open for all offices):

PRESIDENT:	Dr. E. Dana Gibson, Professor of Office Management, San Diego State College, San Diego 15, California
VICE-PRESIDENT:	Dr. William Selden, State Department of Public Instruction, Harrisburg, Pennsylvania
SECRETARY, TREASURER, or SECRETARY-TREASURER:	Open
CHIEF EDITOR:	Enoch J. Haga, Assistant Professor of Business, Stanislaus State College, Turlock, California

The SABE-California Business Education Association meeting will be held:

DATE: March 27, 1961
TIME: 7-9 a.m., Breakfast Meeting
PLACE: U. S. Grant Hotel, San Diego, California, Room 209

This will be the first meeting of SABE as far as it is now known. It is hoped that as many members as possible will attend. The main discussion will center around how SABE members can spread the word about automation. All ideas are needed, particularly how SABE and the SABE DATA PROCESSOR can be improved.

SABE ADVISORY BOARD

So that the SABE organization can have the help of the best brains it can get, an Advisory Board is being set up as permitted under Article IX, Sec. 2 of the SABE Constitution. Some appointments have been made, and as soon as notices of acceptance are received, names will be released. Advisory Board members do not have to be SABE members; ordinarily appointments are for one year and first members will serve for the school year 1961-1962; the following year the number of members will be doubled by one and two year appointments.

SABE EDITORIAL COMMITTEE

As authorized in Article IX, Sec. 1, the Editorial Committee is being set up. Persons who are doing editorial work and articles in the area of automation have been selected; as soon as notices of acceptance are received, names will be released.

AUDIO-VISUAL AIDS

"Automation on the Screen, Films and Filmstrips," BUSINESS EDUCATION WORLD, June 1960, pp. 7-8. This is a list of available materials.

THE MAGIC WHEEL--a 30 minute, 16-mm. color film on development and manufacture of business machines at National Cash Register Co., Dayton, Ohio. May be obtained free (excepting transportation charges) from Modern Talking Picture Service, 3 East 54th St., New York 22, N. Y.

HORIZONS OF SCIENCE--a new series of ten color films, each devoted to the work of a top-ranking scientist. One film covers a game of chess by a giant computer. Order from Film Library, University Extension, University of California, Berkeley 4, California. (There is a nominal service charge).

AUTOMATION I, II, III--look them up in 100 SELECTED FILMS IN ECONOMIC EDUCATION, 75¢ from Joint Council on Economic Education, 2 West 46th Street, New York 36, N. Y.

MICR--THE LANGUAGE OF THE SIXTIES--a sound slide filmstrip; comes with record for use on Dukane Projector (uses inaudible beat frame changer). See your local A. B. Dick representative for free supply of all materials. (Note: MICR means Magnetic Ink Character Recognition).

AUTOMATION IN TODAY'S MODERN OFFICE--a 49-frame filmstrip. A script is available. Contact your local Friden representatives; not only will they come out and show the filmstrip, but they will also conduct a discussion afterward.

WORTH READING

Services

In each issue one service, similar to the one below, will be previewed in detail for your information--next month: DATA PROCESSING DEGEST.

R. Hunt Brown, President of Automation Consultants, Inc., and one of our most enthusiastic supporters, is the publisher of no less than 10 Office Automation services. Brown is a licensed professional engineer; he is internationally known as a writer, lecturer, and consultant in the new field of scientific management. His 30 years of global experience qualifies him as an authority on the subject and makes us proud to have him as a member of SABE.

Brown's OFFICE AUTOMATION LOOSELEAF HANDBOOKS are supplied <u>updated</u> to month of purchase. If you have a general interest in automated data processing you should have OA and OAA with <u>optional</u> updating services. However, if you are interested in a specific field only, you may prefer one of the special handbooks, listed below, with its <u>optional</u> updating service. The Special OA handbooks, <u>updated editions</u>, contain general information and "hardware" descriptions, besides introductory material and actual case studies applicable to the particular field concerned. The Subscribers' Inquiry Service is included at no extra charge with any Office Automation publication. This vital service handles questions you may have regarding the new techniques or machines and their specific applications. This service alone may be worth many times the subscription price. Research and consulting services are also available at reasonable rates for extensive work, with reports if required. A unique reference library is maintained for subscribers in modern air conditoned offices at New York City.

All the handbooks are contained in attractive ultramodern binders--these have hard covers of different colored vinyl plastic, tab separator sheets and strong three prong mechanism for closed, reading, and open positions. <u>Each</u> handbook contains 600-800 pages, 8 ½ x 11,

with over 600 illustrations, the equivalent of a series of ordinary bound books. Optional monthly updating, available for all handbooks, comes with supplementary clear plastic binders.

1. OFFICE AUTOMATION. Explains the new techniques of IDP (common and native languages), EDP (large, medium, and small-scale computers with peripheral equipment such as input devices, memory systems, printers). Contains much valuable reference material including programming, bibliographies, sociological aspects, research and development.

2. OFFICE AUTOMATION APPLICATIONS. Contains information on IDP and EDP techniques, besides detailed case studies by named organizations of actual working installations in various clerical areas. There is a wealth of reference material such as a unique Directory of Computer Users. The case studies have many photos, forms, and flow charts.

3. OFFICE AUTOMATION--BANKING. For commercial and savings banks; material of special interest to bankers.

4. OFFICE AUTOMATION--DISTRIBUTION. Material of special interest to distributors.

5. OFFICE AUTOMATION--GOVERNMENT. For local, state, and federal uses.

6. OFFICE AUTOMATION--INSURANCE. For the insurance field; of special interest to insurance companies.

7. OFFICE AUTOMATION--MANUFACTURING. For the manufacturing field.

8. OFFICE AUTOMATION--OPERATIONS RESEARCH. Of special interest to opsearchers.

9. OFFICE AUTOMATION--UTILITIES. For power, communications, transportation, etc.

For other information and price quotations write: Automation Consultants, Inc., 155 Fifth Avenue, New York 10, N. Y. (Be sure to note reference to OFFICE AUTOMATION NEWS BULLETIN in our Other References section.

Books

AUTOMATION: A PRIME SOURCE OF MORE AND BETTER JOBS. National Association of Manufacturers, $1.

Charles H. Johnson, Editor, DATA PROCESSING. The Proceedings of the 1960 International Convention of the National Machine Accountants Association, Mt. Prospect, Illinois, $10.

Floyd C. Mann and L. Richard Hoffman, AUTOMATION AND THE WORKER. Henry Holt, New York, $4.50.

H. John Ross, INTEGRATED DATA PROCESSING. Office Research Institute, P. O. Box 744, Miami 43, Florida, 1960, $2.

Magazines

"Data Processing Education at the University Level." DATA PROCESSING, 2:9, June 1960.

"Jonker's Approach to Information Retrieval." MANAGEMENT AND BUSINESS AUTOMATION, 4:18, November 1960. Information Retrieval, or IR, is one of the greatest data processing problems remaining to be solved; IR is now about where EDP was in 1950, but by 1970, IR is likely to be where EDP is today. This article is "must" reading.

"Office Market Will Pass Six Billion Figure in 1960." OFFICE MANAGEMENT, 21:58, August 1960. Should be read with Robert M. Smith's article--see reference below.

John H. DeJong, "COBOL, Common Business Oriented Language." DATA PROCESSING, 2:9, October 1960. This article may be the first introduction of some readers to COBOL. But, as it is likely to be the programming language for digital computers of the future, it is one they should read carefully.

Enoch J. Haga, "Data Processing Training in California's Junior Colleges. In two parts: COMPUTERS AND AUTOMATION, August and September 1960.

Robert M. Smith, "Sweeping Personnel Changes Foreseen as Result of New Automation Developments." OFFICE MANAGEMENT, 21:11, August 1960. Part I of a two-part series. Should be read by all business teachers as office work is the base for much of their teaching. (See above: "Office Market . . .").

Van B. Thompson, "A Training Course in Data Processing." DATA PROCESSING, 2:19, September 1960.

Other References

AUTOMATION AND THE BELL SYSTEM, viewed as of July 1, 1960, a statement submitted on behalf of American Telephone and Telegraph Company and other Bell System companies at the invitation of the Subcommittee on Automation and Energy Resources of the Joint Economic Committee, July 1, 1960.

R. W. Bemer notes in a letter to the editor of the COMMUNICATIONS OF THE ACM, November 1960, that while ACM publications suffer from a lack of material on business applications, the British COMPUTER JOURNAL and the COMPUTER BULLETIN carry many business applications articles--a recent example is "A Business Application of a Digital Computer." Both quarterly British publications may be obtained by nonmembers of the ACM for $9.10; cost to ACM members is only $6 for both (membership in ACM is $10). Subscribe through Association for Computing Machinery, 14 East 69th Street, New York 21, N. Y.

John Diebold, AUTOMATION: ITS IMPACT ON BUSINESS AND LABOR. National Planning Association, 1606 New Hampshire Avenue, N. W., Washington 9, D. C., 64 pages, $1.

E. Dana Gibson, TRENDS IN THE EDUCATIONAL USE OF COMPUTERS IN SCHOOLS OF BUSINESS. Monograph 1.1, October 1960. Bureau of Business and Economic Research, San Diego State College, San Diego 15, California.

HOW WILL TEACHING MACHINES AFFECT EDUCATION? This is the theme of the September 1960 issue of the CTA JOURNAL, 1705 Murchison Drive, Burlingame, California.

OFFICE AUTOMATION NEWS BULLETIN, Automation Consultants, Inc., 155 Fifth Avenue, New York 10, New York, $37.50 per year in USA and Canada ($42.50 per year elsewhere) postpaid. Contains reports on experience, interesting new installations, the new equipment, vital topics in the news, recent books, articles and reports, miscellaneous appointments, statements of earnings, etc., important meetings scheduled, and miscellaneous items.

MEETINGS WORTH ATTENDING

March 27, 1961. The first meeting of SABE, the SABE-California Business Education Association meeting, will be held from 7-9 a.m. This will be a Breakfast Meeting in Room 209 of the U. S. Grant Hotel in San Diego, California.

May 9-11, 1961. This will be a meeting of the Western Joint Computer Conference in the Ambassador Hotel, Los Angeles, California. Write to Dr. W. F. Bauer, Ramo-Wooldridge Co., 8433 Fallbrook Ave., Canoga Park, California.

July 25-August 3, 1961. INVITATION TO THE 33rd INTERNATIONAL COURSE SIEC IN SWITZERLAND 1961. The Swiss Society for Business Education is inviting you to the 33rd International Economic Course of SIEC to be held at Berne, the capital of Switzerland. At the end of the Economic Course three days' and four days' trips will be arranged at everybody's convenience. On Sunday, July 30, and on Friday, August 4, a one day excursion will also be prepared for those participants preferring trips to recreation. Business educators will be interested in the planned discussions on "Business Education for Apprentices and for Clerks" and "Business Education at Commercial Schools on College and University Level." All day trips to Zurich and the new mercantile school on college level, and to Lausanne and Vevey and to Nestle's School for leading managers in commerce and industry. Lectures and trips have also been arranged to thoroughly acquaint participants with all phases of Swiss economic life. For further details write: United Business Education Association, Washington, D. C. (This notice taken from the November 1960 issue of the INTERNATIONAL REVIEW FOR BUSINESS EDUCATION by permission of Professor Felix Schmid).

September 6-8, 1961. The annual meeting of the Association for Computing Machinery, Statler Hotel, Los Angeles, California. Write to Mr. Benjamin Handy, Litton Industries, Inc., 11728 W. Olympic Blvd., West Los Angeles, California.

WHAT OTHERS ARE DOING

Mrs. Lucille Meyers at Lennox High School, 11033 Bufford Street, Inglewood 2, California, has been taking an extremely active part in SABE activities. She organized a meeting which grew from ten teachers in four high schools to a Los Angeles County Institute credit meeting. Dr. E. Dana Gibson will teach the group about automation and address them on what high school business teachers can do to promote the work of SABE. Mrs. Meyers is doing just the kind of thing that will make SABE a success. Won't you help in your area? Why not contact Mrs. Meyers and see how she organized her meeting and learn more about what she is doing.

NEW IDEAS

SABER

(Society for Automation in Business Education Roundups)

Members of SABE must take an active part in promoting atuomation in their areas of operation. If they don't, the purpose of the Society cannot be fully realized. A suggested method by which this purpose might be achieved is through organizing "Roundups" in each member's area of influence.

To organize a "Roundup" a member (or members) make a list of those persons whom they think will be interested in learning more about automation as it affects their phase of operation. These persons should be contacted to see if they would be willing to meet once a month, or whenever they can, at a time and place common to most of those assenting. This may be a luncheon, dinner, or other type of meeting. Some groups find such a meeting coupled with an eating period more advantageous. Others find a non-eating time attractive to members attending.

The first meeting should be used to discuss the type of automation programs the group would prefer to learn about. A list of topics to be covered should be constructed, a definite time and place decided upon, and a tentative "program" worked out and distributed to prospective participants. Each person attending the "organization" meeting should be asked to receive and distribute to his acquaintances a copy of each month's duplicated announcement. To assign duties, it may be well to have the first group elect a "SABER Programmer." This person (whose title may be anything the group decides to call him) should be in charge of programs, their distribution, and of meetings for the first semester or 4 ½ months of the school year. Then a new person should be elected to serve the next 4 ½ months. Some groups may want to operate on a shorter or longer period.

It is suggested that some person be invited to each meeting to speak on the topic for that day. In this way, an "expert" will be passing on vital information. Actually, a speech is not what is wanted but a discussion in which the persons attending can participate so as to obtain the most data concerning the questions brought to the meeting.

Because it is not desired that SABE replace other professional organizations, these "Roundups" can, and perhaps should be, tied to regular professional meetings of other groups. Many professional organizations have such "special" groups that meet earlier than the regular meetings. Some have them at times other than the regular meetings so as not to interfere with them. Whatever the solution to this problem, it is hoped that a local professional organization can be encouraged to sponsor such a series of "special" discussion groups.

Depending upon the needs of the local group, such SABER meetings might discuss one or more of the following topics (treat these as indicative only of what your group might do):

1. Why a knowledge of systems is so important in today's office and in other data processing work areas.

2. Why information retrieval, or IR, is likely to have an impact on the life and work of the world as great, or greater, than that of computers only, with which they have much in common.

3. What I should tell my students about computers, automation, and other phases of data processing.

4. How much mathematics is necessary to understand operations research, or OR?

5. How much should I know about OR? How much should I tell my students about it?

6. How much must I know about automation, computers, OR, and similar things to succeed best in my present job? In the job (or jobs) that may replace my job?

7. Is office work a dying area of job employment? If not, why not? If so, why so?

AUTOMATION RESEARCH

Your help in reporting unpublished research will be appreciated. Let's make this the most comprehensive listing available. When research is listed as "under way," why not send help to the person doing the research if you have any material of possible value.

Harry D. David, A STUDY OF DATA PROCESSING IN SPECIFIED MANUFACTURING FIRMS. DBA, Indiana University, Bloomington, Ind., 1959, 142 pages.

Enoch J. Haga, ELECTRONIC DATA PROCESSING--IMPLICATIONS FOR BUSINESS EDUCATION IN HIGH SCHOOL. M.A., Sacramento State College, Sacramento, California, 1958, 119 pages.

James A. Manos, A COMPARATIVE ANALYSIS OF PEN AND MACHINE SHORTHAND. M.S., University of Southern California, 1959, 137 pages.

George C. Potter, AN ANALYSIS OF THE USES OF QUALITY CONTROL TECHNIQUES IN OFFICE OPERATIONS. Ph.D., State University of Iowa, 1959.

Ronald E. Prather, THE SIMPLICATION OF LOGICAL TRUTH FUNCTIONS. Master's thesis, University of California, Berkeley, 1958.

Sister M. John Gabriel Toohey, S.S,N.D., THE EFFECTS OF AUTOMATION IN THE BUSINESS WORLD UPON BUSINESS EDUCATION CURRICULA OF SECONDARY SCHOOLS. M.A., (under way), The Catholic University of America.

FOR TEACHERS ONLY

In the last issue of the SABE DATA PROCESSOR was started the first of a series of teaching units to help teachers to understand better the interrelationships of systems and machines. These were written as a series of weekly lectures to be used in business machines classes.

The first lecture was on what is the meaning of systems, particularly office systems. Unless a business teacher understands something about systems and the importance of it in all offices and business work, he will be unable to see that the correct relationship of a machine or machines in a system is vitally important today to maintain the relative standing of a business, or to better it, with its competitors. Any worker lacking an understanding of this fact of business today is not a good business worker, because systems relationship to machines is everyone's business--not just that of the managers or owners.

Business teachers can use the ideas expressed in these lectures in many classes other than machines classes. The ideas are applicable to any business situation in which a system-machine relationship exists. After the basic series has been exhausted, it is planned that more involved and difficult systems-machines relationships will be discussed. But it is also planned to stress the vital character of systems in business--from how a man organizes the work on his desk to discovering how to run a business through the use of operations research simulation techniques.

Systems References

N. W. Barish, SYSTEMS ANALYSIS FOR EFFECTIVE ADMINISTRATION. Harper & Brothers, New York, 1957.

Victor Lazzaro, Editor, SYSTEMS AND PROCEDURES. Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1959.

2. Interrelationship of Systems and Machines

1. Most businesses can save more money and do their businesses more good by an improved INTERRELATIONSHIP OF SYSTEMS AND MACHINES than by putting in a computer.

2. Definition of I:S&M

a. The development of a system that eliminates, reduces, or speeds up one or more steps in a process and/or may improve their accuracy, through the use of some machine or device. Machines that can be used to satisfy the basic I:S&M relationship are those that make a major contribution to the more efficient handling of data through elimination or reduction of effort, errors, forms, and/or the improvement of a system generally.

3. How can the following machines be used to satisfy the definition of I:S&M?

Machine or Device	I:S&M Use
a. Pegboard	a. Three or more accounting papers from 1 writing.
b. Photocopying device	b. Depends on type and make. Ditto Masterfax can produce (1) Ditto carbon master, (2) an offset plate, (3) a photocopy, and (4) a laminated sheet.
c. Rotary calculator	c. Varies with type and make. Monroe Duplex machine can not only speed up operations by automatic division and multiplication but can accumulate totals or amounts for grand totals, as can competing makes of machines.
d. Stencil duplicator	d. Can produce 3,000 or more exact copies of a typed document, drawn, die impressed, photo etched, etc. from one original stencil.

4. Just adding a machine to a system is not necessarily the answer. A new system, not a new machine may be needed.

5. Case Study--See attached sheet labeled, "Pennsylvania RR 'Automates' New York Ticket Sales".

6. Problem: (Check attached sheet listing Basic Business Machines for ideas on possible answers).

In your office the following jobs are being done. Indicate in the column to the right the machine(s) that you think are needed to improve the system(s) involved. (Partial answers have been supplied).

Job	Machine(s)
1. 3,000 form letters are being mailed monthly	(Addressing, folding)
2. Payroll checks for 15 persons are being typed up each month	(Pegboard)

3. The filing department gets many requests for the use of material already checked out by others — (Photocopying)

4. A grocery chain of large stores (15 in all) requires a weekly meat and vegetable inventory, a monthly inventory of some items, and a complete inventory yearly. — (Dictating)

5. Thousands of invoices are sent out each month which must be checked for accuracy. — (Key-driven Calculator)

send us material

PENNSYLVANIA RR "AUTOMATES" NEW YORK TICKET SALES

Reprinted by permission of Office Management 18:38 April, 1957

A spectacular system incorporating closed-circuit television, facsimile transmission equipment, automatic writing machines, and ticket printers has recently been put to work at Pennsylvania Station, New York terminal of the Pennsylvania Railroad.

The system makes use of 105 television cameras and 100 television receivers, with switching apparatus to permit the various receivers to get a "look-in" at pictures before any of the cameras, simply by dialing a number.

The cameras are used mainly for such purposes as focusing on charts showing the types of space available--roomettes, upper and lower berths, bedrooms, compartments, and so on--on all scheduled trains. This information is shown as much as 16 weeks in advance on some routes.

These charts are maintained centrally. They show all types of space carried by each train, each type being represented by a symbol, such as "B" for bedrooms. When the last space of a given type is sold, the symbol for that category is covered; the chart shows only the types of space remaining.

Ticket sellers at any of the numerous booths where purchasers come to give their orders may obtain a view of the reseration charts by dialing a number. Closed circuit television promptly shows the chart on a small receiver which is visible to both the ticket agent and the customer.

If the space requested is not available, it is a simple matter to select the most satisfactory substitute--either a different type of space, or space on another train--for all the possibilities are on view.

Once a selection is made, the seller dials for a space distribution clerk, who becomes visible on the screen. The clerk is requested to issue the ticket desired. He does so by taking an individual space coupon from racks where many such coupons are stored much as tickets are stored at theater box offices. The coupon is placed in a facsimile transmitter which causes it to be reporduced at the ticket counter automatically within seven seconds.

This coupon shows the particular space assigned. To complete the ticket, the ticket seller prints a fare coupon and a separate rail ticket, using a special matrix for printing in a Burroughs Ticketeer.

The operation is designed to take less than two minutes, as contrasted with the former time of eight minutes, and, moreover, to reduce errors and misunderstandings.

Customers who use large numbers of tickets may subscribe to a facsimile ticket and reservation service, thereby making their requests and receiving their tickets by wire. This procedures eliminates the need for messengers.

The railroad feels that the system will greatly speed the sale of reservations and will thereby improve its relations with the public. Park M. Roeper, the company's Regional Manager at New York, said of the new installation that it is "visible proof that we are taking aggressive steps to find more customers, and that we expect to be in the passenger business for a long time to come."

The system is designed to accommodate reservation requests received by telephone, as well as by facsimile and in person. It is connected with branch offices as well, to facilitate ticket selling in other parts of the city and in other cities also. The television system was supplied by Dage Television Division, Michigan City, Indiana.

send us material

A Possible Classification of Basic Business Machines

Certain classifications of "basic business machines" can be made. While many different groupings are possible, only six will be used in this classification:

a. Figuring and Calculating Machines
   1. Rotary calculators
   2. Key-driven calculators
   3. Ten-key printing calculators
   4. Ten-key adding machines
   5. Full-keyboard adding machines
   6. Bookkeeping and billing machines
   7. Accounting machines
   8. Registers

b. Communicating Machines
   1. Telephone, including switchboards
   2. Telegraph
   3. Radio, TV, Cable
   4. Facsimile printers
   5. Paging devices
   6. Inter-coms
   7. Telautograph
   8. Mechanical (Wire basket, pneumatic tube, conveyor belt)
   9. Typewriters: (Teletypewriters (TWX), standard, electric, Robotyper, Hooven, Vari-typer)

c. Dictation Machines
   1. Tape
   2. Wire
   3. Disc
   4. Belt
   5. Cylinder

d. Duplicating Machines
   1. Stencil deuplicator (mimeographs)
   2. Liquid duplicator (Ditto)
   3. Addressing machines
   4. Gelatine duplicator
   5. Offset duplicator
   6. Printing duplicator
   7. Copying devices

e. Office Furniture and Equipment
   1. Desks
   2. Chairs
   3. Files
   4. Modular units

f. Miscellaneous Machines and Equipment
   1. Pegboards
   2. Collators
   3. Sorters
   4. Folders
   5. Counters
   6. Timers

(Contributed by Dr. E. Dana Gibson, Professor of Office Management, San Diego State College, San Diego 15, California)

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THE SOCIETY FOR AUTOMATION IN BUSINESS EDUCATION was organized to promote the growth and development of knowledge and understanding of automation among business teachers and other interested persons.

THE SOCIETY FOR AUTOMATION IN BUSINESS EDUCATION publishes the SABE DATA PROCESSOR monthly during the academic year. Members and other persons are cordially invited to submit contributions for publication. Mail all communications concerning the SABE DATA PROCESSOR to Enoch J. Haga, Editor, SABE DATA PROCESSOR, Assistant Professor of Business, Stanislaus State College, Turlock, California.

All other communications, including applications for membership, should be addressed to Dr. E. Dana Gibson, President, Society for Automation in Business Education, Professor of Office Management, San Diego State College, San Diego 15, California.

send us material

REQUEST FOR MEMBERSHIP BLANK

Name_____ Title_____

Address_____

Firm or School_____

PROPOSED MEMBERS

I hereby propose the following person for membership (attach another sheet if necessary).

Name_____ Title_____

Address_____

Firm or School_____

May ____ May Not ____
Use my name in contacting person

Proposed by _____

MAIL TO DR. E. DANA GIBSON, PROFESSOR OF OFFICE MANAGEMENT, SAN DIEGO STATE COLLEGE, SAN DIEGO 15, CALIFORNIA.

REQUEST FOR MEMBERSHIP BLANK

Name_____ Title_____

Address_____

Firm or School_____

PROPOSED MEMBERS

I hereby propose the following person for membership (attach another sheet if necessary).

Name_____ Title_____

Address_____

Firm or School_____

May ____ May Not ____
Use my name in contacting person

Proposed by _____

MAIL TO DR. E. DANA GIBSON, PROFESSOR OF OFFICE MANAGEMENT, SAN DIEGO STATE COLLEGE, SAN DIEGO 15, CALIFORNIA.

A/O 2-16-61